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ABSTRACT

The paper is part of a collection of papers commissioned by Foundations, a development project that focused on the career development needs of deaf college students. The background of the Foundations project at the National Technical Institute for the Deaf (NTID) is reviewed, including NTID admissions criteria and consent considerations. It is suggested that Foundations experiences should address four major processes to better prepare students to select and enter majors: decision making, reflection on the past and projection into the future (and applying this process to understanding current experience), effective studying and demonstration of a given level of competency in skill and knowledge areas, and ability to cope with conflicts inherent in the transition from the pre-college to the college environment. Further, it is suggested that Foundations experiences be designed to incorporate the following features: a learner-centered curriculum, maintaining a degree of content and instructor orientation; a high degree of interaction with faculty and peers; a set of rigorous institutional expectations, explicity stated; a curriculum and support system planned to optimize a student's experiencing success provided that expectations are fulfilled; and efforts to enhance cognitive, affective and psychomotor development that begin at the concrete experiential level and move toward abstraction and generalization. (CL)

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A CONCEPTUAL FRAMEWORK FOR FOUNDATIONS

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Abstract

This paper suggests four major processes that should be addressed by "Foundations" experiences in order to better prepare students to select and enter a major:

1. Decision-making;

2. Reflecting upon the past and projecting into the future; applying this process to understanding current experience;

3. Effective studying and demonstrating a given level of competency vis a vis certain skills and knowledge areas;

4. Coping with conflicts inherent in the transition from the pre-college environment to the college environment.

Simply stated, it is recommended that all "Foundations" experiences focus upon the development of student capability to perform the four major processes.

Specifically, it is suggested that "Foundations" be designed using the following principles:

1. a learner-centered curriculum, maintaining a degree of content and instructor orientation;

2. a high degree of interaction with faculty and peers;

3. a set of rigorous institutional expectations, explicitly stated;

4. a curriculum and support system planned to optimize a student's experiencing success provided that expectations are fulfilled;

5. efforts to enhance cognitive, affective and psychomotor development will begin at the concrete experiential level and move toward abstraction and generalization.

This document will furnish the rationale for the processes and principles listed above and will provide a historical perspective on the "Foundations" development project. The paper is intended to be the conceptual framework for "Foundations" experiences.

Antecedents To The "Foundations" Concept

The "Foundations" concept and development project are the culmination of a series of studies and resulting reports, dating from 1976, which pertain to the early stages of students' career development at NTID. The following sections provide a historical perspective to "Foundations".

Report of the 1976 Study Group

In 1976, the Associate Dean for Career Development Programs (CDP) charged a group of faculty representing the various divisions of CDP with making recommendations relative to the early stages of career development of NTID students. The group was constituted as a result of the Institute's recognizing that problems existed with respect to student progress in these early stages. In 1977 the study group issued a report (Areson et al., 1977) that pointed out:

1. students' apparent inadequacies in English, math and career decision making competencies, and

2. the need for students to demonstrate certain levels of competency in personal/social skills in order to succeed in a major.

In addition, the report indicated that institutional programmatic responses to such problems were inadequate. Further, it was indicated that there was "...broad support for some form of preparatory program" (p. 3) that would:

1. allow students more time and more data on which to base a career decision;
2. allow for more interaction with students and a more thorough assessment of students' abilities by faculty and staff;
3. allow more time for appropriate skill building. (p. 11)

It was further noted that "there was strong support among those interviewed for most of the activities and goals of SVP (Summer Vestibule Program), but general discontent with the brief time allowed for these activities" (pp. 11, 12). It was felt that, "SVP could be made into a more effective and useful program by allotting more time to those

activities which have a direct relationship to the process of entering a major and postponing activities whose nature is not vital to the career decision" (p. 12).

1977 SVP Evaluation

Consequently, an evaluation of the 1977 Summer Vestibule Program was conducted to identify those aspects of SVP which should be allotted more time and those aspects which could be postponed. Additionally, the objectives and overall organizational configuration of the program were reviewed. A SVP evaluation report was issued in 1978 (White, 1978) and among the recommendations contained in the evaluation report were the following:

1. The top priority of NTID should be to formulate a comprehensive plan of how to improve students' career decision making capabilities such that most students are able to make reasonably sound career decisions at the time they enter a major.
2. Objectives for SVP should be defined and priorities established from an institutional perspective (emphasis added).
3. Measures should be taken to reduce students' feelings of excessive pressure to select a major before the beginning of the Fall Quarter. This implied not only a change in attitude about the summer but also the creation of more realistic options for more students during Fall quarter.
4. The format of information sent to students prior to SVP should be reevaluated.
5. Greater continuity in faculty/student interaction should be developed in an effort to foster more trusting relationships between the two (pp. 5,6,9,36).

The Early Stages of Career Development Concept Paper (1979)

As a result of the above studies and their findings, the CDP Associate Dean, Assistant Deans and Directors concluded that "some midcourse adjustments were needed in our career development programs" (Bishop et al., 1979, p. 2). Data were collected to better define student needs and the inadequate programmatic responses referred to in the 1976 Study Group Report. The analyses of these data resulted in the delineation of five major needs:

1. better preparing students to select a major;
2. better preparing students to enter a major;
3. facilitating students changing majors within their first two years without incurring significant costs to the student or the institution;
4. reducing the time some students are taking to complete a degree;
5. reducing the rate of withdrawals for what might be considered the wrong reasons. (p. 27)

The Concept Paper included a proposal for a Foundations Program with specific content components, i.e., life skills, general education, communication and survey of technology. The concept of a "program" was proposed not so much as a prescription but rather with the intention that it would "serve as the basis for dialogue and studies from which would emerge an appropriate solution for meeting these needs" (p. 17).

Foundations Development Project

In the summer of 1979, "Foundations" development was initiated and a two person development team was charged with three goals:

1. to better prepare students to select a major;
2. to better prepare students to enter a major;
3. to facilitate changes of major without undue cost to the student or the institute.

Articulating a development process was the first task undertaken. The development process was designed to provide for collegial debate and contribution. Further, the process focused upon defining the needs, gathering/analyzing data, constructing a theoretical framework and positing solutions.

Kaufman (1972) suggests that needs identification is an analysis of the discrepancy between where one is and where one wishes to be. Such an analysis specifies the distance between these two. He further suggests that an assessment must have at least three critical characteristics:

1. the data must be as valid and representative as possible of the actual world of the learner
2. no analysis is ever final or complete
3. discrepancies should be identified in terms of ends, i.e., actual products or behaviors, and not in terms of processes (p. 29)

Following Kaufman's construct, the development process has attempted to focus, in part, upon determining the nature and magnitude of the discrepancy or distance between:

1. environmental expectations/assumptions, and entering students' characteristics;

2. the requisite processes underlying success in college, and student facility with such processes;

3. technical, general education, and communication content expectations for selecting and entering majors, and the skill and knowledge levels of entering students.

Environmental expectations. A student's experience at NTID is influenced to a large extent by the RIT/NTID environment and by the student's ability to cope with and respond to the stresses, expectations and assumptions inherent in that environment. In the course of developing "Foundations" experiences, an essential task was the analysis of the environmental dynamics influencing students. A major thrust of "Foundations" development has been, therefore, the identification and documentation of those inherent environmental assumptions and expectations. Environmental expectations are being documented through an analysis of: expected community living behaviors, Institute rules and procedures, institutional expectations regarding toleration of individual differences and respect for the rights of others, and institutional expectations regarding the maintenance of social order. In addition, the way in which NTID and RIT are organized to deliver instruction and to interact with students is being examined to determine implicit assumptions about the student. For example, at NTID Mathematics instruction is generally delivered through a learning center and it is assumed that students can schedule their own time to work on the course and will take the initiative for seeking assistance.

Learners' entry characteristics. NTID was established to serve a special population. The admissions criteria, as specified by the Guidelines, describe the target population as follows:

1. Special Help
   A student should have attended a school or class for deaf students and/or have needed special help because of being deaf.

2. Hearing Loss
Students must have a hearing loss that seriously limits their chance of succe in college without special support services. There is a general agreement that an average hearing loss of 60 decibels (ASA) or 70 decibels (KSO) or greater across the 500; 1,000; and 2,000 Hz range (unaided) in the better ear is a major handicap to education.

3. Educational background
A student's educational background should show that he or she can probably succeed in a program of study at NTID or one of the other nine colleges of RIT. Students who are admitted should have an overall eighth grade achi ment level or above. This means that the average score on an achievement test that includes reading, math and language should be at an eighth grade level.

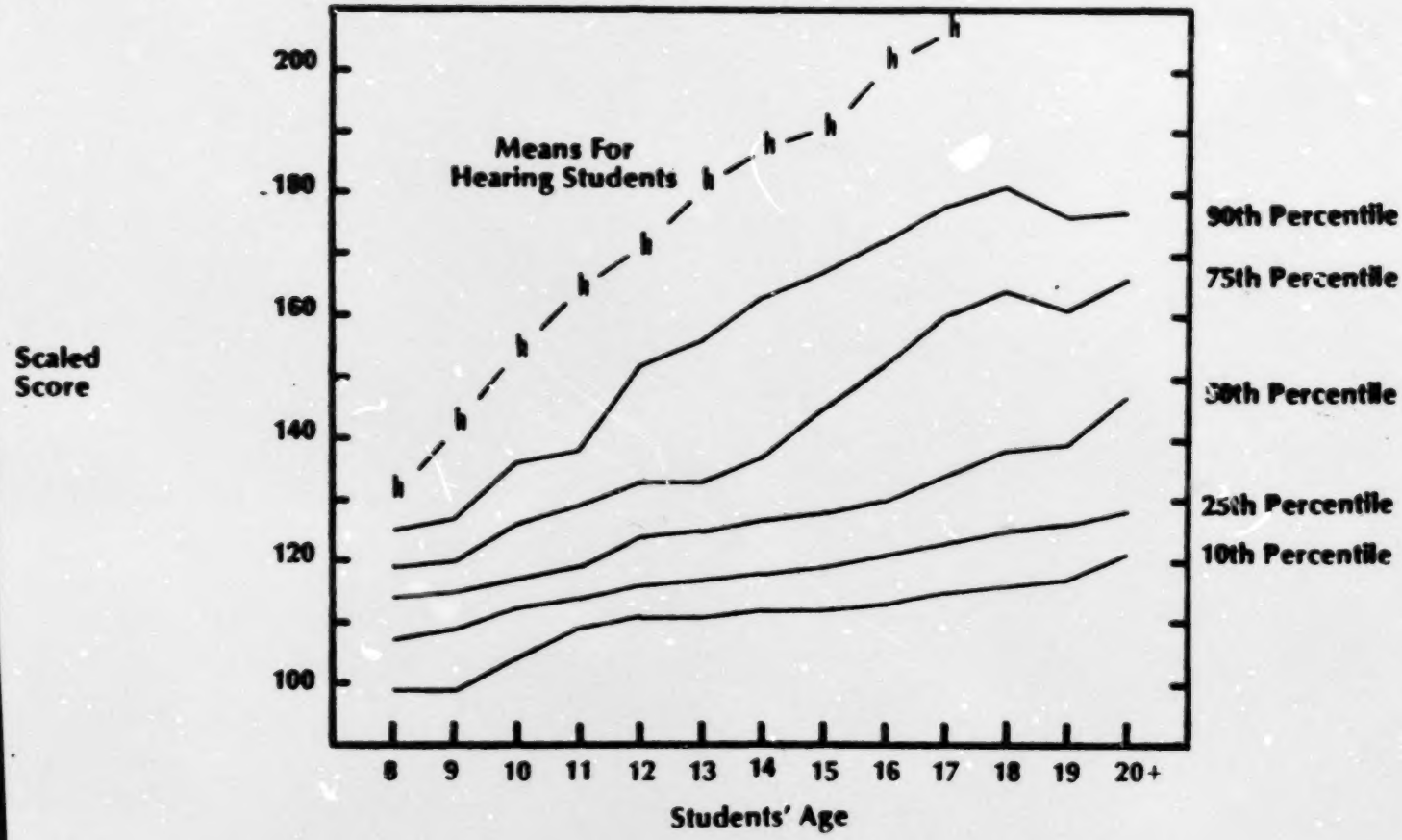
4. Secondary schooling
The NTID program at RIT is designed for students who have finished a secon educational program. Students can be considered for admission before comp a secondary program if their secondary school authorities feel that they will gain more from the NTID program than by remaining in secondary schoo Age and personal/social maturity are given special consideration.

5. Maturity
A student must show that he or she is personally and socially mature enough to enter a program at NTID or one of the other nine colleges at RIT. This means that students must accept responsibility for themselves and their actions and respect the rights of others. The information is provided throug the student's personal references and performance in the Summer Vestibule Program (SVP).

6. Citizenship
A student must be a citizen or permanent resident of the United States. (RIT Official Bulletin, 1980, p. 14)

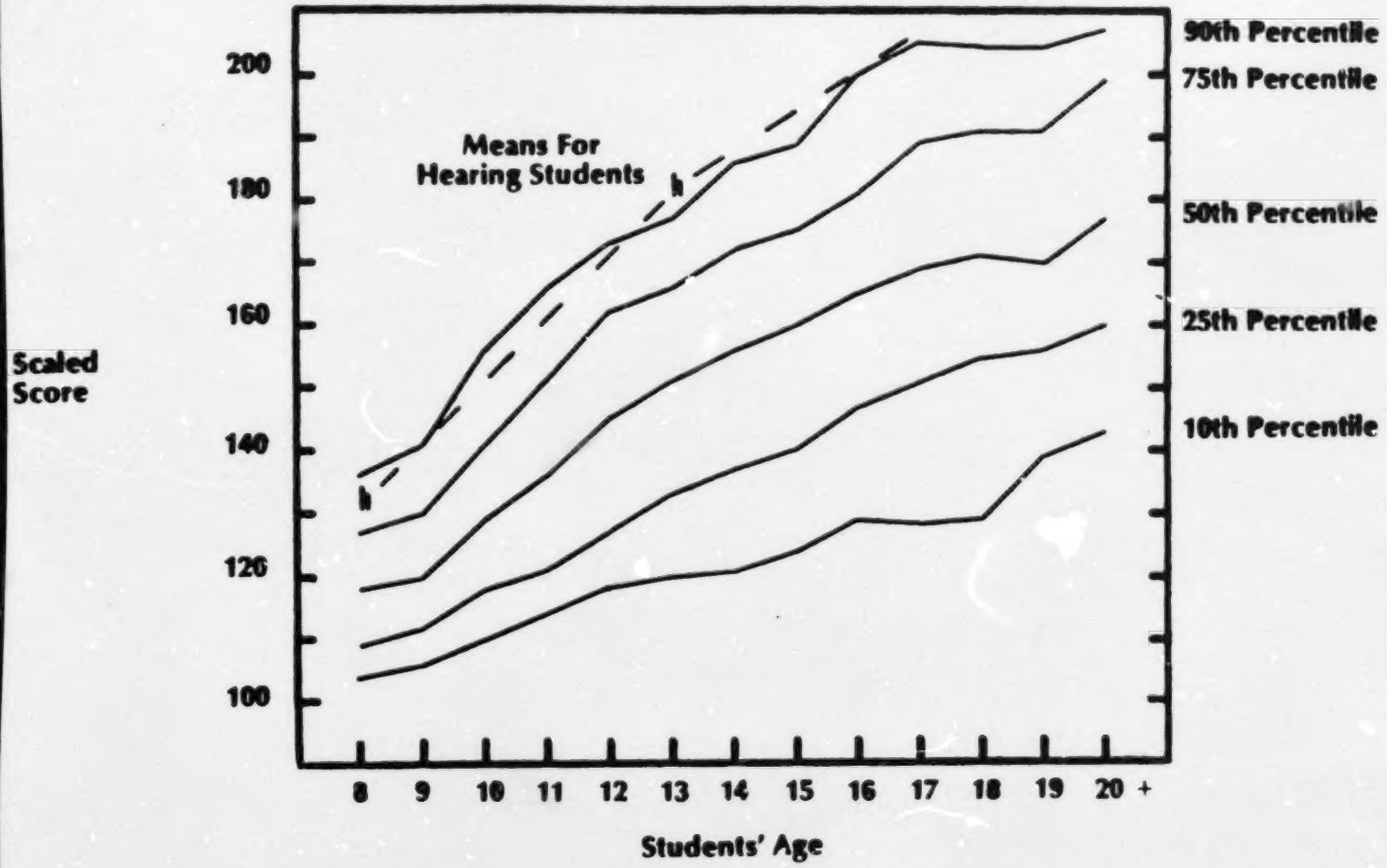
These admissions criteria have not changed since their establishment, i.e., NTID still strives to serve the same population its founders intended. An examination of some key characteristics of entering students over the past six years (see Appendix, see also Figures 1 and 2) shows these characteristics to be essentially unchanged. Not only has the nature of the entry population remained stable, but this population continues to represent the top 10% of the hearing-impaired secondary school graduates in the United States (Trybus & Karchmer, 1977).

Figure 1: Reading Comprehension Scores National Distribution for Hearing Impaired Students



(after Trybus & Karchmer, 1977)

Figure 2: Mathematics Computation Scores National Distribution for Hearing Impaired Students



A.A.D./April 1977

Figure 1 shows that the median reading score at its highest point, for students aged 20 or above, is 147. This corresponds to a grade equivalent of about 4.5. In other words, half the students at age 20 (or at any younger age) read at less than a mid-fourth grade level, that is, below or barely at a newspaper literacy level. What about the high-achieving group? Figure 1 shows that the high point of the 90th percentile line occurs at age 18, where a scaled score of 181 (grade equivalent 8.1) is reached. Thus, at best, only 10% of hearing impaired 18-year olds nationally can read at or above an 8th grade level.

Figure 2 presents a somewhat brighter picture for math computation, generally the highest score area for hearing impaired children. In this case, the mean line for hearing children roughly parallels the 90th percentile line for hearing impaired children, so that about 10% of hearing impaired children can do math computations at the level of the average hearing child of the same age. Most hearing impaired children, however, do much less well even here, and the median hearing impaired 20-year old reaches a scaled score of 177, just below an 8th grade level. A comparable score is obtained by the average hearing child at about age 13. (Trybus & Karchmer, 1977, p. 64)

In terms of personal/social characteristics of entering students, there is qualitative evidence that suggests a constancy in their nature. The data in the 1971 Hanner et al. report, when compared with data collected by the "Foundations" development team in the summer of 1979, show that faculty concerns regarding students' personal and social skills are essentially unchanged over the decade. Furthermore, DeCaro and Emerton (1978) established empirically that there is a developmental lag in the level of social reasoning of entering students vis a vis hearing students in the same age group. Anecdotal information gathered since 1977 suggests that this particular developmental lag still exists among entering students.

Given the apparent stability of entry characteristics over the past decade, it is clear that the original purpose and mission of NTID are not redundant. Further, since the characteristics of entering students have been shown to be stable and, in all likelihood, can be expected to remain so in the foreseeable future, interventions will have to occur at the environmental level and/or in developing certain student competencies once individuals have been identified as NTID students.

Content considerations. In order to be able to successfully enter a major, the learner must be able to demonstrate competence and knowledge in certain technical, personal/social and communication skill areas. Therefore, it has been necessary to specify the knowledge and skills that need to be developed by students during "Foundations" experiences. A content analysis has been conducted, and the findings of this analysis shall be reported separately. The content expectations are being documented by analyzing a course in each major which tests, for the first time, a learner's potential for technical success in that major. The analysis focuses on the identification of not only technical prerequisite skills and knowledge but also communication and personal/social expectations. The content analyses were focused in such a fashion because the report of the Study Group on the Early Stages of Career Development suggested four factors as being necessary for student success:

1. mathematical competency;

2. English language with specific concentration on reading comprehension;

3. the ability to make career decisions;

4. the ability to receive information well enough to be able to understand lectures, questions and directions.

Major Processes Students Must Be Prepared To Perform

Due to the nature of NTID and the nature of the curriculum offered through NTID (technical disciplines), a hearing-impaired student is required to declare the intention to pursue a specific course of study relatively early in his/her tenure at RIT. For example, students wishing to study for most NTID Associate Degrees must be prepared to declare their intention by the start of the Fall quarter of their first year at RIT. Such is the case at most community colleges that offer certificate, diploma or AAS programs of study. This circumstance can be contrasted with that of a learner seeking a Bachelor's Degree in the liberal arts who, more often than not, declares a major and is accepted by a department in his/her third year. Technical curricula at the Associate, Diploma or Certificate levels require that students take highly specialized courses early in their tenure in order that they can complete such curricula within the time limit generally allotted. Unfortunately, many NTID students seeking such certification are not adequately prepared to select or enter a major (Bishop et al, 1979) and often are unable to demonstrate the ability to succeed in the major. For example, the attrition rate from NTID programs since 1974 has been 40 percent and is projected to reach 43 percent (DiLorenzo, Marron & Welsh, 1981) in spite of the special nature of the services and curriculum provided for learners at NTID. In addition, DiLorenzo and Welsh (1981) supported the contention that students are ill-prepared to select or enter a major upon arrival at NTID when they stated that:

> 1. The conclusion and concern of the "Concept Paper" (Bishop, et al, 1979) that many students, upon entering NTID, are not ready to make career decisions is substantiated.
>
> 2. Many students' lack of preparedness to select a major at entrance to NTID is demonstrated by the wide range of majors to which they change.
>
> 3. Significant numbers of students recognize early that they not only selected the wrong major, but they are still not ready to select a career area and elect to spend some time in NCDS. (pp. 14-15)

The Report of the Study Group on the Early Stages of Career Development (Areson et al., 1977) suggested that SVP could be made more effective by emphasizing those activities which have a direct relationship to entering a major. Furthermore, the 1977 summer SVP evaluation report (White, 1978) suggested that the top priority of NTID should be the formulation of a plan to improve student decision making capabilities so that students are able to make sound career decisions at the time of selecting a major. In addition, data collected in the summer of 1979 during intensive workshops with faculty highlighted sixteen problem areas that faculty perceived as needing attention in order to improve the student's likelihood of success at NTID (see Appendix A). Of the sixteen problem areas, six were eliminated from consideration in the "Foundations" development project because the Career Development Programs administrative group perceived them as broader institutional curricular issues, i.e., outside the scope of consideration for "Foundations". The "Foundations" development project continued to consider the problem areas during development so as not to replicate the weaknesses or problems inherent in extant systems. The problem areas isolated for consideration by "Foundations" (see Table 1) relate directly to the processes of career decision making and preparation to enter a major.

TABLE 1

Synthesis of Problem Statements in Appendix A[1]

A. Our students have a limited experiential and information base. (synthesis of original #1 and #5)

B. Our students have a limited knowledge of self, e.g.:

a. strengths/weaknesses re career clusters
b. values system
c. interests

C. In the area of problem solving, our students appear to have a limited repertoire of coping skills and limited exposure to having to make decisions in a variety of contexts and settings. (ref. need to enhance process skills and broaden the information base) (synthesis of original #3 and #4)

D. We are unable to provide appropriate experiences for students who are at various levels of indecision or indecisiveness.

E. There is a gap between students' entry abilities and the criteria for entry into majors, and there is insufficient time to address this gap prior to the students' entry to a major. (synthesis of original #12 and #14)

F. There is a lack of a systematic process for assessing a learner's strengths and weaknesses re majors and for transmitting such information to the learner and to the appropriate administrative authority re the major.

[1]Statements 6, 7, 8, 11, 15 and 16 were eliminated at the suggestion of the CDP administrative group. We chose to eliminate #10, as it is subsumed under other problem statements.

Studies conducted to date suggest quite clearly that the outcomes expected of "Foundations" are appropriate and necessary:

1. to better prepare students to select a major;

2. to better prepare students to enter a major.

A Developmental Approach

Foundations will be characterized by a developmental rather than remedial approach to education because the developmental level (Belenky, 1980; Athey, 1980) of an individual influences his/her interpretation of life situations (e.g., selecting and entering a major), and since developmental theory provides some broad indicators of how an individual will react in such situations. Belenky (1980) presents a variety of factors that she suggests contribute to the development of social reasoning. Citing Piaget and Kohlberg, she argues that moral development depends upon having a wide range of role taking opportunities in a variety of social institutions and suggests that the opportunity to participate in an ongoing dialogue is likely to be essential for the development of the individual. She also suggests that hearing-impaired people often experience a deprivation in social interaction (Stokes, 1945; Brunehwig, 1936) and display a lag in understanding the interpersonal dynamics of social relationships (Levine, 1956). Harris (1978), in reviewing four studies of impulse control that utilized standardized assessment (Altshuler et al., 1976; Binder, 1970; Moores et al., 1973; Harris, 1976), concluded that a loss of auditory input appears to have a retarding effect upon the development of impulse control in deaf adolescents. The findings of DeCaro and Emerton (1978), that most deaf students entering the NTID between 1975 and 1977 were operating at the pre-conventional level of reasoning on Kohlberg's (1969) scale of reasoning are therefore not surprising. Belenky (1981) describes the pre-conventional stage as follows:

> ...characterized by hedonism - the good is that which satisfies one's own needs, interests and wishes. The right and needs and feelings of others will be considered to the extent that such considerations are seen as benefiting the self. "Tit for tat" suggests the basis for this thinking which has achieved some liberation from adult constraint. As adults are no longer seen as omnipotent the interests of the self can be asserted more fully...Preconventional adolescents delayed in development are still under the influence of internal and external physical stimuli, rather than that of symbolic representations conceptualizing past and future roles and values which have been shared and self-examined. (p. 8)

This description is remarkably similar to faculty statements characterizing the behaviors of NTID students (Hanner et al., 1971; Appendix A).

While it is clear that the development of the college-age hearing-impaired person lags behind that of his/her hearing peer, it is not altogether clear what can or should be done to facilitate development. There are, however, important suggestions that can be drawn from the literature. For example, irrespective of the model used to study human development (Athey, 1980), implicit in each is the assumption that there will be intensive and prolonged interaction in social settings with peers and mature adults. In addition, Schlesinger (1978) suggests that an adolescent must have meaningful, reciprocal, and largely positive interactions with the environment in order to move through the first three developmental steps described by Erikson (1964; 1968). Further, Belenky (1980) suggests that special efforts should be made to provide young people with <u>two</u> broad kinds of experiences that can enhance their development of moral judgment:

> 1. extensive, participation in the governance of fairly complex and sizable democratic institutions where...conflicts would be fully debated...
>
> 2. working with others on an individual basis where such qualities as care, responsibility, and understanding are essential and reciprocated (p. 42).

"Foundations" experiences will include meaningful, reciprocal, and positive interaction in social settings with peers and mature adults. Learners will be provided opportunities for involvement in the governance of complex democratic systems where there is human interaction directed at the resolution of conflicts inherent in such systems.

First Process - Managing and Coping with Conflict

Since many learners come to NTID ill-prepared to enter and select majors, there is a need for such preparation to occur at RIT. The environment of RIT is significantly different from that to which most learners are accustomed. Even those students who have attended the most academically stringent of preparatory high schools find the transition to a university setting to be a formidable challenge. Such a challenge is even more formidable for hearing impaired students who may be, for the first time, in an educational setting where the student body is predominately hearing. An antecedent to preparing to select and enter a major is, therefore, the ability to manage or cope with the conflicts inherent in the transition from the pre-college environment to the RIT environment. The strategies which can be used in the resolution of such conflict are similar to those that have been isolated for persons making the transition from one culture to another: adherence, substitution, addition, synthesis, and creation (Wasilewski & Mitchell, 1980). Similarly there are general social competencies, e.g. role-taking, knowledge of alternative strategies and the appropriate use of alternative strategies (Weinstein, 1969), which can be helpful in resolving the conflicts in such a transition. Such conflicts are often related to differences in attitudes, patterns of thought, social organization, roles and role perceptions, language, use and organization of space, time conceptualization and non-verbal expression (Samovar & Porter, 1976), i.e., there is a knowledge and skill component to managing and coping in a cross cultural "type" setting. The faculty of NTID (Table 1) have isolated informational and process skills necessary to facilitate student success.

Foundations experience will attempt to optimize the potential for students' managing and coping with the conflicts inherent in the transition to college by:

1. assisting students in identifying the differences between their attitudes, patterns of thought, social organization, roles and role perceptions, use and organization of space, time conceptualization and non-verbal expressions and those that are expected of students at RIT.

2. helping students become aware of and gain skill in the appropriate alternative strategies that are available to resolve the differences.

In order to be of assistance to students in this respect, Foundations experiences and NTID must provide learners with a clear series of expectations regarding social organization, roles, use and organization of space, use and organization of time and the like.

Second Process - Decision Making

The selection of a major is a decision-making activity. Student decision making will be a second major process to be facilitated/developed by "Foundations" experiences. Steve (1980) has suggested reasons, well supported in the literature, why an individual does not succeed in a decision-making situation:

1. He suggests that individuals can fail because they lack the prerequisite skills to search out, recognize and use relevant information. This is best described by Gagne's (1968) theory of hierarchies of learning and could be termed the "learning deficit explanation."

2. Individuals may fail because their information processing capabilities are taxed beyond their limits. Steve refers to this as the "biological limitation explanation" which has been described by Simon (1976).

3. He suggests that poor decision making involves the conflict individuals feel in decision situations with important consequences. He refers to this as the "decisional conflict explanation" best described by the model constructed by Janis and Mann (1977).

The entering student, in order to be successful, must be able to function in many situations under varying degrees of risk, informational and time constraints. Most, if not all, of these situations require the student to make decisions of varying degrees of importance and to recognize the relative degrees of importance vis a vis their outcome.

Steve (1980) recommends that certain environmental modifications regarding information and time can be made to foster quality decision-making. He also identifies certain considerations internal to the decision maker, regarding risk, which also must be addressed to facilitate decision-making.

Environmental considerations. With respect to information Steve recommends that, to facilitate student career decision-making, "Foundations" should consider: the type of information required in the decision, the availability of that information, the presentation form of the information which students may need, and strategies to insure that the information is accessible at the time the decision is made. There will be three principles used in the determination of career decision information to be incorporated into "Foundations" experiences:

1. the information must be useful or relevant to the career decision of selecting a major;

2. the information must be available to students in an economic fashion relatively free of distractor information;

3. the information must be accessible to the student at the time the decision is being made.

In addition, there must be a component of "Foundations" which seeks to develop information search, recognition and use skills because:

a. such skills are generalizable to new decision situations;

b. the necessary information for most decisions is almost never neatly presented to a decision maker.

With respect to time, the human is a biologically-limited information processor, and the three principles listed above are a necessary but not sufficient consideration in facilitating development of decision-making regarding selection of a major. There is often insufficient time for students to process the information necessary to make an appropriate selection of a major.

As indicated previously, the Study Group On The Early Stages of Career Development (1977) recommended that students need more time for making career decisions. It is therefore necessary for "Foundations" experiences to provide students with more time than is currently allotted for making career decisions. This can be accomplished, in part, by initiating certain of the "Foundations" experiences prior to students' arriving on the RIT campus.

Internal considerations. In addition to time and information, which can be controlled environmentally, there are perceptions and beliefs internal to the decision maker that affect the quality of the decision processes used. These perceptions relate to the risk in continuing a current course of action, the risk involved in changing a course of action, and the belief that a better solution can be found. These perceptions need to be clarified by the individual making a decision and need to be brought into conjunction with the realities of the decision situation. It is in the articulation, clarification and bringing into conjunction of perceptions and "realities" that there is a need for intensive human interaction. The individual involved in decision-making should interact with a person or persons who can objectively facilitate reflection upon perceptions of risk and the belief in the existence of potential solutions. Such a role can be played by counselors, mentors (Hawkins, 1980), peers (Osguthorpe, 1980) or classroom teachers. The concern is not so much who is the facilitator but rather that the facilitation can be demonstrated

to be occurring systematically. Due to the complex nature of such facilitation, it will be necessary to have mature adults play this role, and it will also be necessary to design some "formal" experiences that encourage reflection. The third major process to be an integral part of "Foundations" experiences will focus upon reflection.

Third Process - Reflection

Dowaliby and Pagano (1981) have pointed out that a learner enters a decision situation with a multitude of previous experiences, and that some of these experiences share characteristics with the current decision situation. In order to negotiate a new situation, the decision maker must first isolate the characteristics of past experiences which are salient to current circumstances. Based on the past experiences and the configuration of the current circumstances, the person will have certain expectations regarding his/her chance of success in meeting the challenges embodied in the new situation. The expectation will influence the amount of effort the individual is willing to expend. This leads to action and a resulting outcome along a success continuum. The outcome will generate an affective response in the decision-maker, and the accuracy of causal ascription will depend upon:

1. correct analysis of the decision task,
2. accurate perception of own resources relative to the decision task,
3. adequate expenditure of effort.

In order to grow, an individual must be able to identify what he/she did that contributed to the resolution of a decision conflict and to store that as part of the experience base to be mobilized in future situations (Athey, 1980). The more the learner engages in the process just described and the greater the range of experiences assimilated, the greater the probability that, faced with a situation with different surface stimuli, he/she will be able to identify shared general characteristics with previous experiences and apply learnings from these previous experiences to the resolution of the new situation.

"Foundations" will therefore attempt to develop students' abilities to:

1. reflect upon past experiences and determine which of those experiences are related to a decision situation at hand;

2. isolate those characteristics of said experiences that are salient to the decision situation at hand;

3. project a series of expectations regarding success and willingness to expend effort;

4. accurately assess one's own resources relative to the task at hand;

5. adequately expend effort (take some action) in accomplishing the task at hand.

Here again there will be a need for intensive interaction between a decision maker and a facilitator. Such interaction will need to be student-centered (Hawkins, 1981), i.e., the primary objective of the interaction is student development, and the facilitator must be flexible in order to meet the student's needs as a developing human being.

Several reviews of the literature (Athey, 1980; Belenky, 1980; Dansereau, 1980; Dowaliby & Pagano, 1981; Kraft, 1980; Steve, 1980; Whitaker, 1980) have indicated the need to assist students in identifying the relationship between characteristics of previous experiences and those of current experiences. Focusing upon the affective and cognitive outcomes of prior experiences will help to establish a baseline for addressing new experiences.

Fourth Process - Studying

Upon entering an institution of higher education students are expected to be prepared to engage in independent learning. However, data indicate that students enrolling at NTID are weak in such skills. For example, Hanner et al. (1971) listed a series of "observations on which there was substantial agreement among instructors about the deaf students" (p. 11). One such observation was that students are "not fully aware of the effort and

learning strategies required to be successful in studies at the post-secondary level" (p. 12). This condition has remained substantially unchanged--a needs assessment conducted with faculty in 1979 (see Appendix A) uncovered essentially the same concerns. Faculty in the Advanced Program support teams and General Education Programs continue to offer study skills courses to hearing-impaired learners. Further, career counselors offer seminars to students in NTID's certificate, diploma and associate level programs on such topics as time management, scholastic motivation, studying for exams and coping with differing teaching styles. In effect, considerable resources have been directed at developing students' abilities to learn and study.

The fourth process to be facilitated by "Foundations" experiences will be the development of study skills. To facilitate discussion, studying will be broken into two broad categories: willingness to study and studying strategies.

Willingness to study. Willingness to study is dependent upon the student's perceiving a need for studying in order to achieve his/her goals. In an attempt to identify the goals of entering NTID learners, Stinson (Lang and Stinson, 1981) conducted a study in which twenty students were interviewed. The students were administered a standard set of open-ended questions in order to determine why they had come to NTID, what were their concerns upon entry and what was most exciting to them upon entry. The reason most commonly identified by the students for coming was "social" with "academic reasons" being cited second -- the difference between the two was statistically significant. Further, it was found that entering students felt that attending college was of real value for their future but were not able to articulate their career goals very well. In addition, the students expressed concerns about entering a career and being successful academically but they less frequently expressed concerns (statistically significant) about establishing social relationships or self maintenance (funds etc.). Students may be willing to study

but may be placing study in a secondary position as compared to socialization. Anecdotal information collected from career counselors, faculty and staff tends to support this contention.

When a student's willingness to study is in question, the student must first know what is required, regarding study, to succeed at college and must compare this with his/her own expectations. That is, the student must compare and contrast the study effort and skills deemed necessary for college success with his/her own expectations regarding study, academics, and socializing, and must identify the discrepancy between the two. As a result, the student will know a discrepancy exists but may not comprehend the meaning of the discrepancy since he/she most likely has not had to demonstrate the study behaviors necessary for success in college. It is necessary for the learner to experience a situation in which he/she has an opportunity to test the reality of discrepancies identified. Such an experience will need to be processed by the learner (see the section on Reflection) in order for him/her to begin to understand the magnitude and the nature of the discrepancies and to take some action to eliminate these discrepancies.

Study related skills. A student may be willing to expend effort in studying but may lack certain study skills. For example, students may not possess the skills to manage their schedules and prioritize competing social and academic time demands. In addition, students may not possess adequate skills at identifying and understanding relationships in what they study, selecting the important material from what they study and cognitively reorganizing the materials into a personalized schema (Long, Hein & Coggiola, 1978).

Dansereau et al. (1979) describe a series of six primary comprehension-retention and retrieval-utilization learning strategies: mood setting, understanding, recall, digesting, expanding and reviewing. They also identified a series of support strategies for optimizing the internal psychological environment of the learner: goal setting and scheduling, concen-

tration management, monitoring and diagnosing. A learning strategy system, composed of instruction in these primary and secondary strategies, was developed and used with college-age learners. The system proved to be effective in enhancing the behaviors and attitudes of participants (Dansereau et al., 1979). Dansereau (1980) suggests that many learners could benefit from such skills and strategy training courses. He recommends that, if possible, "the skills and strategy programs should be run in parallel with regular content courses" (p. 88).

Developing studying skills. "Foundations" experiences will include a component which focuses upon:

1. assisting students in identifying the discrepancy between study behaviors needed in college and their behaviors prior to entering college;

2. providing students the opportunity to test the reality of this discrepancy by participating in rigorous academic activities which require study for success and in which they can be successful if they study;

3. facilitating reflection upon experiences (2 above) in order to assist students in focusing upon the effort and skills needed for academic success;

4. providing skill and strategy instruction of the type developed by Dansereau et al. (1979).

Summary

In summary, there are four processes upon which "Foundations" will focus in order to better prepare students to select and enter majors:

1. coping with or managing the conflicts inherent in the transition to the college environment;

2. decision-making;

3. the ability to reflect upon past experiences, relate these to new experiences and take action regarding the new experiences;

4. studying and demonstrating a given level of competence vis a vis certain skills and knowledge areas.

Design Principles

There are a variety of orientations that could have been selected to characterize "Foundations" experiences: a learner-centered orientation, a content-centered orientation, or an instructor-centered orientation (Hawkins, 1980). "Foundations", from its inception, has derived its focus from a commitment to better meet entering NTID students' needs in preparing to select and enter majors. It is appropriate, then, that the hallmarks of "Foundations" experiences, i.e. its tenets, be directly tied to fulfilling this commitment. "Foundations" will be an integrated set of learner-centered experiences.

In the learner-centered orientation, the needs of the student for overall human and social development are considered to be primary (Hawkins, 1980). Chickering (1981) suggests that learning and human development are additive and occur in the context of a student's past history, personal characteristics and motives. He states that, "this makes information about the knowledge and competencies gained from work and life experiences especially important in designing effective education..." (p. 16). He suggests that, "we are tackling the bedrock task of human development..." (p. 16) when we attempt to achieve the end of effective preparation for work. This is particularly relevant when one considers a series of generic competencies identified by Klemp (1977) as necessary for success on a job:

1. communication skills,
2. information processing skills, conceptualizing skills,
3. ability to learn from experience,
4. ability to understand many sides of a complex issue,
5. accurate empathy, positive regard for others,
6. giving assistance, controlling impulsive feelings,
7. define oneself as actor, cognitive initiative, proactive stance.

Very often curriculum will sacrifice the development of these generic skills for the development of content area knowledge. "Foundations" experiences will seek to facilitate the development of the seven skills areas cited above. In so doing, student needs and level of development will be considered to be of primary importance. Since education is the process of movement from one skill, attitudinal, knowledge, or developmental level to another, students' entering skill, attitudinal, knowledge or developmental levels will be the starting point for "Foundations" experiences. Since learner-centered experiences focus upon "meeting the student where he/she is" and facilitating movement to where he/she needs to be in order to successfully meet academic challenges, "Foundations" experiences will be designed to accommodate entering students' developmental levels, while providing the conditions to facilitate the attainment of higher levels of development.

The learner-centered orientation will <u>not</u>, however, be taken at the exclusion of the other orientations. There will be a degree of content-centeredness in "Foundations" experiences. In a strict content-centered orientation, teachers and students would be expected to adjust their behaviors or attitudes to accommodate the requirements of the content disciplines (majors). The majors would, in effect, dictate the skills, facts or propositions that must be acquired, and there would be little room for deviation. Such an orientation is the one most often taken by those of us educated in technical disciplines. Unfortunately, the pre-requisite skill requirements of a discipline are not quite as unambiguous as one might expect at first glance. While a content analysis can isolate broad and general skill requirements across disciplines, there is debate within disciplines regarding the specific competencies necessary to enter a career area. Since Foundations" will be held accountable for better preparing students to enter a major, there will be a need for a degree of <u>content-orientation</u> but, since disciplines are not static and there is a lack of clarity regarding prerequisites, it will be necessary that the content addressed in "Foundations" be common across NTID disciplines.

In addition, there will always be a need for those valuable insights, anecdotes and touches of humanity that can be provided only by a teacher with experience. There is, therefore, the need for a degree of instructor orientation in "Foundations". Taken to the extreme, however, an instructor considers him/herself to be "the" model for students to emulate, i.e., the unique approach he or she takes to teaching is considered to embody the content taught. The student is expected to go to the teacher in search of wisdom and is expected to accommodate his or her personality or style.

Principles

There are four principles that will be utilized in designing "Foundations" experiences:

1. there will be a set of rigorous institutional expectations, explicitly stated;

2. if expectations are met by the student, success will be experienced; if expectations are not met, there probably will not be a successful outcome;

3. there will be a high level of interaction between students and faculty, as well as between entering students and older students;

4. "Foundations" experiences will be designed to move from a concrete, experiential base toward abstraction and generalization.

Wherever possible these four principles will be adhered to in the design, construction, and implementation of "Foundations" experiences.

Rigorous expectations, explicitly stated. The college environment places demands upon students' adaptive skills, in terms of meeting both social and academic expectations. Currently, the first experience most students have at NTID, the Summer Vestibule Program, tests a student's ability to cope socially but does not provide an accurate and realistic sampling of the academic demands a student will face in the Fall Quarter and beyond. Therefore, realistic and accurate academic expectations will be established from the student's first contact with "Foundations".

The need for explicit statement of the expectations derives from most students' limited experience with inferring rules and correctly interpreting unstated expectations from abstract and loosely-connected experiences. Since students' developmental levels may require clarity of communication, a minimum set of institutional expectations will be made explicit to the student from the beginning of his/her association with NTID.

Experiencing success if expectations are met. Explicit statements of expectations are a necessary but not sufficient condition for optimizing a student's chances of success. For example, with respect to acceptable levels of studying, academic success can be accomplished through the utilization of support systems (e.g., tutoring, mentoring, study skills instruction, etc.) which will optimize the probability that the student can meet the challenges of academic college.

Dowaliby and Pagano (1980) has pointed out that a person will attribute success to his/her own actions if he/she has succeeded in a situation that was challenging, in which he/she expended a reasonable amount of effort and in which he/she expected to succeed. Although "Foundations" experiences will be designed to optimize success, they will be challenging and require considerable expenditure of effort on the part of the student.

A high level of interaction. Many students come to NTID with limited experiences interacting with adults, peers, and social systems. Communication difficulties with hearing individuals and restrictive environments in many schools are primary contributors to the reduced frequency of such interaction. Liben (1978) suggests that a deprivation in a student's experience may have serious consequences for development:

> Social experience may also be divided into two components. First, social interaction provides the opportunity for transmission of the society's knowledge, traditions, mores, values, etc., through both formal and informal means, for example, school and family. Second, social interaction provides the opportunity for the child to develop social-cognitive skills. Interactions with adults and peers force the child

> to recognize that others' viewpoints may differ from his or her own, thus helping the child to decenter from the egocentric perspective of preoperational thinking. (p. 198)

"Foundations" will be designed to encourage and facilitate reciprocal social interaction with peers and adults through systems of mentoring, student participation in the governance of "Foundations" experiences and non-didactic approaches to teaching. In addition, major emphasis will be placed upon facilitating students' development of competency in the four major processes until they are able to perform the processes with limited assistance.

Concrete to abstract. Learners entering NTID tend to be pre-conventional in their thinking (DeCaro and Emerton, 1978), and persons at the pre-conventional level are "...still under the influence of internal and external physical stimuli, rather than that of symbolic representations conceptualizing past and future roles and values which have been shared and self-examined" (Belenky, 1980, p. 8). Colby and Kohlberg (1973), Kohlberg (1969), Kohlberg and DeVries (1969), and Kuher, Kohlberg, Langer and Haan (1975) have shown that there is a corresponding stage in Piagetian developmental levels for each moral stage. Belenky (1980) has, however, pointed out that mature cognitive reasoning does not automatically assure that there will be maturity in moral reasoning. She also indicates that while evidence shows (Furth, 1964; 1966; Vernon, 1967) that the early stages of cognitive development described by Piaget are not delayed in deaf children, the evidence is not so clear for development of formal operational thought. She suggests that "if hearing impaired adolescents are unusually delayed in achieving the capacity for abstract, formal thought, that delay could contribute to the unusually low levels of moral reasoning in (deaf) college students observed by DeCaro and Emerton (1978)" (p. 22). It remains to be seen if students do lag in the achievement of formal thought; however, ancedotal information would tend to indicate that such a lag is likely.

Parasnis and Long (1978) have reported data which show that NTID students tend to be more field dependent than their hearing peers. Further, Dowaliby (study in progress) has found that NTID students are more people oriented and desire greater structure in a learning situation than do their hearing counterparts -- these are traits characteristic of field dependent persons. There is data (Koran, Snow & McDonald, 1971; Maranty & Dowaliby, 1973a; 1973b) which establishes a trait-treatment interaction between field dependence/independence and destract/concrete presentations of learning materials. For example, Koran et al. (1971) suggest that "...explicit, concrete presentation of the stimulus elements...may provide a behavioral representation for the learner that he could not generate for himself..." (p. 226). Concrete models and well illustrated verbal presentations appear to serve a compensatory function for field dependent learners.

While there are no studies regarding deafness which link the constructs cited above to the desirability of concrete vs. abstract instrumentation, the data are considered to be strong enough to warrant addressing learners in such a fashion as to progress from the concrete to the abstract in "Foundations" experiences. A variety of concrete and tangible experiences will be designed to provide opportunities for students to take many roles, to interact with adults and peers, to take reasonable risks, to take an active problem-solving stance and to experience cause-effect relationships. Such opportunities are often missing from many students' backgrounds and are necessary if the students are to successfully master the four processes put forward in this paper.

Concomitantly, "Foundations" experiences will begin the process of moving toward the abstract and generalizable - with appropriate supports to enable the student to do so. Given the current status of the technical courses in various majors, preparedness to enter translates partially into the ability to manipulate abstractions and to make generalizations. It would be a disservice to students not to attempt to facilitate the development of such abstract reasoning processes.

There are some hypotheses and assumptions which have been made in developing this conceptual framework that will be tested during the pilot and implementation phases. For example, it is hypothesized that most entering students have attained the level of concrete operational thought but not formal reasoning--this will be tested. Finally, the "Foundations" concept - as well as the concept of an NTID - are essentially embodiments of the hypothesis that significant interventions can be made to facilitate the development of hearing-impaired individuals.

Conclusion

This document proposes four major processes that "Foundations" experiences should address in order to better prepare students to select and enter majors. The paper also proposes some broad principles to be used in the design of such experiences. The proposal of these processes and design principles comes as the culmination of a needs assessment and approximately two years of dialogue regarding several theoretical constructs. This document submitted to NTID as the conceptual framework around which "Foundations" will be designed.

Bibliography

Altshuler, K.Z., Deming, W.E., Vollenweider, J.D. & Tendler, R. Impulsivity and profound early deafness: A crosscultural inquiry. Americal Annals of the Deaf, 1976, 121, 331-345.

Areson, A., Doe, S., Kadune, N., Long, J., Maruggi, E., and White, K. Report of the Study Group on the Early Stages of Career Development. Unpublished manuscript, National Technical Institute for the Deaf at Rochester Institute of Technology, February 1977.

Athey, I. Theories and models of human development: Their implications for the education of the deaf (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Belenky, M.F. The role of deafness and educational in the moral development of hearing impaired children adolescents (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Binder, P.J. The relationship between verbal language and impulsivity in the deaf (Doctoral dissertatio , Wayne State University, 1970). Dissertation Abstracts International, 1971, 32, 5t :4B-5615B. (University Microfilms No. 71-384).

Bishop, M., Crandall, K., Hinkle, W., Peterson, B., Streim, N. & Vos, S. Early stages of career development: A concept paper. Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1979.

Brunchwig, L. A study of some personality aspects of deaf children. New York: Teachers College, Columbia University, 1936.

Chickering, A.W. Integrating liberal education, work, and human development. American Association for Higher Education Bulletin, 1981, 33(7), 1-17.

Colby, A. & Kohlberg, L. The relation between the development of formal operations and moral judgement. In D. Bush & S. Feldman (Eds.), Cognitive development and social development. Relationships and implications. New York: Lawrence Earlbaum Associates, 1973.

Dansereau, D. Transfer of learning from one setting to another (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Dansereau, D.F., McDonald, B.A., Collins, K.W., Garland, J., Holley, C.D., Dickhoff, G.M. & Evans, S.H. Evaluation of a learning strategy system. In H.F. O'Neil, Jr. and C.D. Spielberger (Eds.) Cognitive and affective learning strategies. New York: Academic Press, 1979.

DeCaro, P.A. & Emerton, G. A cognitive developmental investigation of moral reasonin in a deaf population. Paper presented at the American Educational Research Asso Annual Meeting, Toronto, 1978.

DiLorenzo, L., Marron, M. & Welsh, B. Student, graduate or dr out? (Concept paper - follow-up report IV). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1981.

DiLorenzo, L. & Welsh, B. Changing programs and majors: How many? when? where? (Concept paper - follow-up report II). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1981.

Dowaliby, F.J. & Pagano, J.A. Locus of control: Review and implications for instruction of the hearing-impaired (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1981.

Erikson, E.H. Insight and responsibility. New York: Norton, 1964.

Erikson, E.H. Identity, youth and crisis. New York: Norton, 1968.

Gagne, R.M. The conditions of learning. New York: Holt, Rinehart and Winston, 1977.

Hanner, B., Badamy, J., Berry, H., Consaul, V., Rucker, T., Stuckless, R., Titus, J. & Young, J. Toward the identification of educationally significant traits of post-secondary deaf students. Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1971.

Harris, R.I. The relationship of impulse control to parent learning status, manual communication, and academic achievement (Doctoral dissertation, New York University, 1976). Dissertation Abstracts International, 1977, 37, 4682B. (University Microfilms No. 77-5410).

Harris, R.I. Impulse control in deaf children: Research and clinical issues. In L.S. Liben (Ed.), Deaf children: Developmental perspectives. New York: Academic Press, 1978.

Hawkins, R. Primary monitoring as a teaching strategy (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Janis, I.L. & Mann, L. Decision making. New York: The Free Press, 1977.

Kaufman, R.A. Educational System Planning. Englewood Cliffs: Prentice Hall, 1972.

Klemp, G.O., Jr. Three factors of success. In D.W. Vernilye (Ed.) Relating work and education. San Francisco: Jossey-Bass, 1977.

Kohlberg, L. Stage and sequence: The cognitive developmental approach to socialization. In D.A. Goslin (Ed.) Handbook of socialization theory and research. Chicago: Rand McNally, 1969.

Kohlberg, L. & DeVries, R. Relations between Piaget and psychometric assessments of intelligience. Paper presented at the Conference on the National Curriculum, Urbana, Ill., 1969.

Koran, M.L., Show, R.E. & McDonald, F.J. Teacher aptitude and observational learning of a teaching skill. Journal of Educational Psychology, 1971, 62, 219-228.

Kraft, R.J. The theory of experiential learning (Foundations literature review series). National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Kuhn, D., Kohlberg, L., Langer, J. & Hoan, U. The development of formal operations in logical and moral judgement. Genetic Psychology Monographs, 1975.

Lang, H.G. & Stinson, M. Career education and socioeconomic status of deaf persons: Concepts, research and implications. Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1981.

Levine, E.S. Youth in a soundless world. New York: New York University Press, 1956.

Liben, L.S. Developmental perspectives on the experiential deficiencies of deaf children. In L.S. Liben (Ed.) Deaf children: Developmental perspectives. New York: Academic Press, 1978.

Long, G., Hein, R. & Coggiola, D. Networking: A semantic-based learning strategy for improving prose comprehension (Department of R & D Paper Series No. 26). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1978.

Marantz, S. & Dowaliby, F.J. Film versus lecture methods of instruction as related to imageability. Paper presented to the American Educational Research Association, 1973a.

Marantz, S. & Dowaliby, F.J. Individual differences in learning from pictoral and verbal instruction. Unpublished report, University of Massachusetts, 1973b.

Moores, D.F., Weiss, K.L. & Goodwin, M.W. Evaluation of programs for hearing impaired children: report of 1972-1973 (Research Project No. 57, Project No. 332189, Grant No., OE-332189-4533). Minneapolis: University of Minnesota Research, Development and Demonstration Center in Education of Handicapped Children, 1973.

Osguthorpe, R.T. Tutoring special students (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Parasnis, I. & Long, G.L. Relationships among spatial skills, communication skills, and field independence in deaf students. Perceptual and Motor Skills, 1979, 49, 879-887.

RIT Official Bulletin. Vol. LXXX, No. 3. Rochester, New York: Rochester Institute of Technology, May, 1980.

Samovar, L.A. & Porter, R.E. Intercultural communications: A reader. Belmont, Califor Wadsworth Publishing Company, 1976.

Schlesinger, H.S. The effects of deafness on childhood development: An Eriksonian perspective. In L.S. Liben (Ed.) Deaf Children: Developmental perspectives. New York: Academic Press, 1978.

Simon, H.A. Administrative behavior: A study of decision-making processes in administra organization. New York: Free Press, 1976.

Steve, M. Problem solving and decision making: A review of the literature (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Stokes, W. Sign language structure: An outline of the visual communications systems of the American deaf. Buffalo: University of Buffalo, 1945.

Trybus, R.J. & Karchmer, M.A. School achievement scores of hearing impaired children: National data on achievement status and growth patterns. American Annals of the Deaf, 1977, 122(2), 62-69.

Weinstein, A.R. The development of interpersonal competence. In D. Goslin (Ed.) Handboo of socialization theory and research. Chicago: Rand McNally, 1969.

Wasilewski, J.H. & Mitchell, J.D. Martin. Multicultural coping and adaption competencies (Foundations literature review series). Unpublished manuscript, National Technical Institute for the Deaf at the Rochester Institute of Technology, 1980.

Whitaker, U. Experiential learning as a teaching strategy for the career education of hearing-impaired college students (Foundation literature review series). National Technical Institute for the Deaf at the Rochester Institute for the Deaf at the Rochester Institute of Technology, 1980.

White, Karl R. A Summary Report of an Evaluation of NTID's 1977 Summer Vestibule Program: Report #1. Unpublished manuscript, National Technical Institute for the Deaf at Rochester Institute of Technology, March, 1978.

APPENDIX A

Problem Statements Isolated In 1979

1. Our students have a limited knowledge base and frequently have preconceived notions re careers and majors.

   1. Work experience limited
   2. Sex-stereotypes
   3. Majoring in college, liberal arts/tech
   4. External influences on choice
   5. Expectation/ability don't mesh
   6. Personality influences (don't like chairperson - won't major in that dept)
   7. Misconception of majors (civil tech. bulldozer driver)
   8. Choice of majors influenced by ideas of salary
   9. Limited exposure to career options and role models

2. Our students have a limited knowledge of self, e.g.,

   a. strengths/weaknesses re career clusters

   b. values system

   c. interests

1. External control (peers, parents, etc.)
2. Ability and expectations don't mesh
3. Lack of ability to introspect
4. Help seeking (wrong person, wrong time, wrong way)
5. Very limited experiential base/lack of feedback
6. Unwillingness to take responsibility for decision (seeks a solution, not advice)
7. No developed value system - or underdeveloped
8. Black and white way of viewing the world, values, behaviors

3. Our students use unsophisticated processes for decision-making.

   1. Don't consider alternatives, risks, consequences
   2. External influences on decision (peers, parents)
   3. Accountability - we don't hold students accountable, students won't accept accountability
   4. Discrepancy between social expectations and real limitations of a disability
   5. Process students use (if they use one) seems to be based on "today"
   6. Limited information on which to base a decision
   7. Seek decisions from authority rather than making decision for self

4. Our students lack a repertoire of coping skills.

1. Unwillingness to face problems (transfers, LOA, turn-off when encounter difficulties) (fear of failure??)
2. Inability to transfer what they did in one situation to another (English skills to photo, strengths in solving problems in past to solving problem now)
3. Need for immediate response to problem
4. Lack of awareness of normal range of problems
5. Locus of control (<u>other</u> people need to change; they control my destiny)
6. Students can't separate problems (all are intertwined)
7. Problems with time management and setting priorities

5. Our students possess an inadequate knowledge base re cultures and their development.

1. Stereotyped ideas about careers and groups
2. Rigidity and low tolerance for differences
3. Lack of appreciation for deaf culture, where they come from
4. Don't understand dynamics of a setting
5. Severe culture shock upon arrival at NTID
6. Inability to judge life experiences, to be non-judgmental about things they can't always be judgmental about
7. Generalizability - transferability - applicability of principles, concepts

6. An NTID student's sense of purpose and identity emanates primarily from affiliatio with a major.

1. Lack of incentive for courses outside the major or when in NCDS
2. External control on I.D. (also transient)
3. Crash when don't have a major
4. Identification may be with people in major, not major itself

7. There is no centralized body which reviews and monitors an individual student's flow as well as aggregate student flow.

1. Only counselor has access to all info but everytime the student changes, he gets a new counselor
2. Lack of uniformity/uniform criteria in how departments determine if students can transfer in or out
3. Changing roles of counselors, staff chairpersons leave question of authority/responsibility up in air
4. No one person is totally aware of any one student's history
5. Our attitude makes it easy for students to change
6. It may be preferable not to have a centralized body/big brother
7. When counselors change, info about students is lost - student may make same mistake again and again

8. We lack an institutional definition of aberrant student flow.

    1. Don't have parameters to vary from (#'s of changes, time limits, etc)
    2. Ambivalence re LOA's, changes
    3. Ethical/Policy Issues - How much time, resources is one student entitled to? etc.

9. We are unable to provide appropriate experiences for students who fall in the different cells of the matrix.

	Has Necessary Skills For Major	Does Not Have Necessary Skills for Major
:nows what major he/she wants and : is an NTID/RIT major		
nows what major he/she wants and : is not offered at NTID/RIT		
oes not know what major he/she ants		

1. How far does NTID's responsibility go in providing experiences for all students?
2. We aren't making enough use of individualized instruction, multiple entry points
3. Low-skill students very frustrated in skill improvement tracks

10. Students are forced to choose a career direction prior to being ready and able to do so.

    1. External influence on decision-making
    2. Lack of information
    3. How can we measure when students are "ready" for a decision
    4. Our structure forces people into choices which may be premature

11. Students lose an unacceptable amount of time and credit in transferring from major to major.

    1. Lack of multiple entry times
    2. Lack of options for students who are undecided or who want to change majors in quarter when new major isn't opening
    3. Students lose time even in natural changes (Civil or Arch to Indust. Drafting; C.S. to NBTD)
    4. Students "in-between" majors lose motivation to study

12. There is a gap between students' entry abilities and the criteria for entry into majors.

1. Our entry criteria may be unrealistically low considering how far we have to move students by time of major (entry and exit) and the amount of time we have to do it in
2. What are implications of our criteria for multiply-handicapped students
3. Secondary schools' records cannot always be relied upon
4. Need better assessment of skills and transmittal process to students for early discussion of most realistic and most unrealistic options open to students

13. There is a lack of a systematic process for assessing a learner's strengths and weaknesses re majors and for transmitting such information to the learner and the appropriate administrative authority re the major.

1. Team concept - good concept, what will happen to it? Could lead to fragmentation re the student's input
2. Who is responsible for transmitting info to student, to faculty
3. Tests may not be valid with our population

14. There is insufficient time to develop process skills and content mastery prior to the student's entry to a major.

    1. Validity of requirements/false requirements
    2. Treating all students as if they all had same needs
    3. Lack of experiential base

5. We lack multiple entry points to NTID and to majors.

   1. Strategies like - multiple sections, self-pacing
   2. What is pay-off of going to multiple entry - how many students are we talking about
   3. NTID-RIT-NTID flow may put students out of sequence

16. We lack specified institutional, departmental and major requirements for institutional curricular offerings and for certification of students.

1. The requirements we do have, we don't enforce
2. Validity of requirements
3. Sequencing of requirements